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| 09/832,181      | 04/11/2001  | Michael Sandlin      | 50346-027           | 8825             |

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| EXAMINER               |
|------------------------|
| MCDONALD, RODNEY GLENN |

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1753  
DATE MAILED: 11/08/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
**09/832,181**

Applicant(s)  
**Sandlin et al.**

Examiner  
**Rodney McDonald**

Art Unit  
**1753**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.

- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_\_
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above, claim(s) 7-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some\* c) ☐ None of:

- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 5,6
- ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

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### *Election/Restriction*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-6, drawn to a sputtering target, classified in class 204, subclass 298.13.
  - II. Claims 7-10, drawn to a method of making the target, classified in class 419, subclass 1+.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP. § 806.05(f)). In the instant case the product can be made by another and materially different process such as casting..
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Robert Price on November 5, 2002 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-6. Affirmation of this election must be made by applicant in replying to this Office action. Claims 7-10 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

7. Claims 1, 3 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Masaki (Japan 05-148631).

Masaki teach as a magnetic material a Co-Cr-Pt-B alloy having a composition constituted of, by weight, 5 to 20% Cr, 10 to 55% Pt, 0.001% to 0.5% B and the balance Co. (See Abstract)

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8. Claims 1-3, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Schlott et al. (Japan 8-260136; Machine translation)

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Schlott et al. teach a target for magnetron sputtering. The target can be a Co-based alloy with an additive composed of C at least one of Pt, Pd, Ni, V, Ta, W or B. (See Abstract) The target alloy has Pt from 8-18 atomic % Pt and 19-21 atomic % Cr. A part of the Cr content can be replaced by other elements such as Ta, W, Mo, Pd, Ti, V, Ni and B. (See Machine translation) A claim to the Co based alloy it containing  $0 \leq \text{Pt} \leq 16$  atomic % and  $19 \text{ atomic \%} \leq (\text{Cr} + \text{R}) \leq 23$  atomic%. A part of Cr being replaceable by R in that case, and R expressing at least one of the  $19 \text{ atomic \%} \leq \text{Cr} \leq 23 \text{ atomic \%}$ . (See machine translation)

9. Claims 1-3, 5 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Uchida et al. (U.S. Pat. 5,468,305).

Uchida et al. teach their present invention relates to a method of lowering the permeability of a *Co alloy sputtering target* which is used in the formation of a Co alloy film as a recording material in the electric field, and particularly to a method of lowering the permeability of a difficult-to-work Co alloy by introducing working strain. (Column 1 lines 7-12)

To achieve the above object, according to the present invention, there is provided a method of lowering the permeability of a difficult-to-work Co alloy by introducing high working strain. The method includes the steps of: making a Co alloy by melting, the *Co alloy containing* 0.1 to 40 atomic % of Ni and/or *0.1 to 40 atomic % of Pt*, and *0.5 to 10 atomic % of one or more kinds of elements* selected from a group consisting of *Ta*, Mo, W, V, Nb, Hf, Zr, Ti and *B*

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(the upper limit of B: 5 atomic %), the balance being 50 atomic % or more of Co and inevitable impurities; preparing a sheet like ingot having a thickness of 30 mm or less using the Co alloy; and covering the surface of the ingot with a metal capsule or coating it with a glass lubricant, and hot-rolling the treated ingot in such a manner that the reduction is performed in two stages accompanied by reheating and the whole reduction is 30% or more. (Column 2 lines 1-14)

*The above-described Co alloy may contain 4 to 25 atomic % of Cr together with or in place of the elements of Ni and Pt.* (Column 2 lines 18-20)

10. Claims 1-3, 5 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Schlott et al. (U.S. Pat. 6,372,104).

Schlott et al. '104 teach a *cobalt based alloy having a chromium* content in the range of 18-21% permits a high degree of magnetic field penetration which is comparable to non-ferromagnetic alloys. *The alloy preferably contains 8-18% Pt and optionally may contain small amounts of* Mo, Pd, Ni, Ti, V, *Ta*, W, and *B*. (See Abstract)

Schlott et al. '104 teach a target for sputtering with a magnetron cathode, the target consisting of a *Co base alloy with addition of Cr*, the alloy having a composition such that the Curie temperature of the alloy is below 80.degree. C., and the alloy consisting of *Co, 0-20 at. % Pt, 18-21 at. % Cr, and optionally R, wherein R stands for one or more elements selected from the group consisting of Mo, Pd, Ni, Ti, V, Ta, W, and B. Wherein R is present in said alloy in the range of 0-3%.* (Column 4 lines 1-11)

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***Claim Rejections - 35 USC § 103***

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11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashima (U.S. Pat. 6,406,600).

Takashima teach a *CoPt-base sputtering target*. The *CoPt-base sputtering target contains Co as the principal component, Pt as an indispensable element, and at least one element selected from the group consisting of the 4a group elements, 5a group elements, 6a group elements, B and C*. (See abstract)

*A preferred alloy contains 0.1 to 25 atomic % Cr, 0.1 to 20 atomic % Pt, 0.1 to 15 atomic % Ta, and an optional element of 0.1 to 15 atomic % B* because the alloy makes it possible to obtain high recording and reproducing characteristics as the recording layer of a magnetic disk. (Column 6 lines 3-8)

The differences between Takashima and the present claims is that the range being at least 2 atomic% is not discussed and the phases present in the target.

The target has a structure in which the maximum inscribed circle diameter of *a phase consisting of a Pt simple substance* is substantially not more than 50 microns and in which the

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thickness of *a diffusion layer at the boundary of the Pt phase* is substantially not more than 50

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microns. (See Abstract) In order to suppress nonuniform distribution of Pt and to increase the pass through magnetic flux of a target, it is desirable that the target has a structure *in which a part of or all of Co is bonded as an alloy phase alloyed with at least a part of the elements other than Pt*. (Column 5 lines 37-41) For production of the targets various powders of simple substance elements including Pt powder of simple substance and Co-base alloy powders can be used. The powders can be HIPped. The HIPping is can be performed under the Hip conditions of 950 degrees C, 150 MPa and 1 hour holding. (Column 7 lines 19-20) Since the production conditions of Takashima's target are similar to applicant's disclosed production conditions the phases required by applicant's claims must be present due to the similar process conditions.

As to the overlapping ranges of Takashima when compared to the present claims, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by Takashima because overlapping ranges have held to be a prima facie case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549.


Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected the required ranges and phases in the target as taught by Takashima because it allows to increase the pass through magnetic flux of a target and allows for obtaining high recording and reproducing characteristics.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney McDonald whose telephone number is 703-308-3807. The examiner can normally be reached on M-F from 8 to 5:30. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen, can be reached on (703)308-3322. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



RODNEY G. MCDONALD  
PRIMARY EXAMINER

RM

November 6, 2002